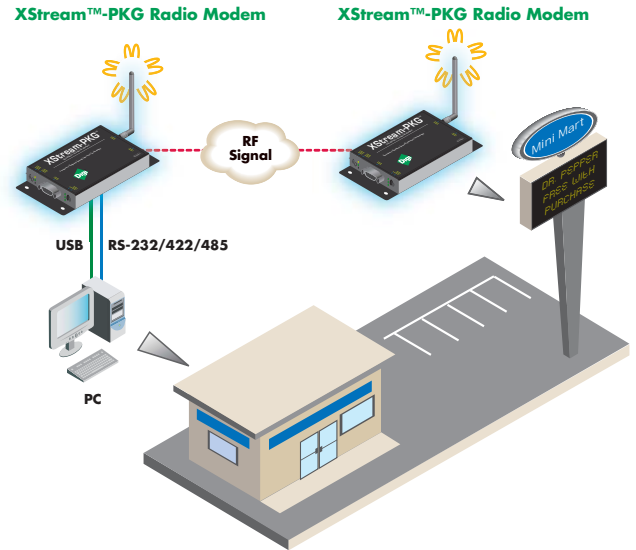# XStream™-PKG RF Modems

100 mW/900 MHz or 50 mW/2.4 GHz Stand-Alone Radio Modems

900 MHz and 2.4 GHz stand-alone RF modems provide outstanding range (up to 20 miles) in a low-cost wireless solution.

XStream™-PKG Radio Modem   **XStream™-PKG Radio Modem**

RF Signal

USB   RS-232/422/485

PC

Mini Mart

Features/Benefits

> **Indoor/urban range up to 1500 feet**

> **Outdoor line-of-sight range up to 20 miles (with high gain antenna)**

> **7 frequency hopping channels, each with 65K available addresses**

> **Outstanding receiver sensitivity (-110 dB @9600 bps)**

> **Low power consumption for power-sensitive applications - Pin, serial port and cyclic sleep modes available**

> **Performs retries and acknowledgments for reliable packet delivery**

> **Easy out-of-the-box operation — no configuration necessary**

> **Durable industrial grade enclosure**

Overview

Digi's XStream-PKG RF modems can be configured in minutes to provide low-cost serial cable replacement between all types of electronic devices. Available in 900 MHz and 2.4 GHz models, XStream-PKG modems provide transmission ranges of up to 20 miles in a low-cost wireless solution. The modems are coupled with a DIP-switchable RS-232/422/485 interface board and regularly outperform more expensive RF modems.

Innovations stamped in their design enable XStream-PKG modems to yield two- to eight-times the range of competing modems. This allows OEMs and integrators to cover more ground with fewer devices. Additionally, XStream-PKG modems are easy to use, thereby reducing the complexity of data system development.

Available in a variety of data interface options, including RS-232/422/485 serial, USB and telephone, XStream-PKG modems can wirelessly connect a variety of devices across many applications including remote monitoring, building automation/security, industrial automation/SCADA, fleet management/asset tracking and sensor data capture in embedded systems.

Features/Specifications

PERFORMANCE

- Indoor/Urban range (w/ 2.1 dB dipole antenna):
  - Up to 1500 feet (450 m) @ 900 MHz
  - Up to 600 feet (180 m) @ 2.4 GHz
- Outdoor RF line-of-sight range (w/ 2.1 dB dipole antenna):
  - Up to 7 mi (11 km) @ 900 MHz
  - Up to 3 mi (5 km) @ 2.4 GHz
- Outdoor RF line-of-sight range (w/ high gain antenna):
  - Up to 20 mi (32 km) @ 900 MHz
  - Up to 10 mi (16 km) @ 2.4 GHz
- Transmit power output:
  - 100 mW (20 dBm) @ 900 MHz
  - 50 mW (17 dBm) @ 2.4 GHz
- Receiver sensitivity:
  - 900MHz: -110 dBm (@9,600 bps throughput data rate), -107 dBm (@19,200 bps)
  - 2.4 GHz: -105 dBm (@9,600 bps throughput data rate), -102 dBm (@19,200 bps)
- Interface data rate (software selectable): 10 - 57600 bps (including non-standard baud rates)
- Throughput data rate: 9,600 or 19,200 bps
- RF data rate: 10,000 bps (@9,600 bps throughput data rate) or 20,000 bps (@19,200 bps)

DIMENSIONS

XStream-PKG-R, XStream-PKG-U,
- Length: 2.75 in (6.99 cm)
- Width: 5.50 in (13.97 cm)
- Depth: 1.12 in (2.86 cm)
- Weight: 7.10 oz (200.00 g)

XStream-PKG-T
- Length: 2.75 in (6.99 cm)
- Width: 6.50 in (16.51 cm)
- Depth: 1.50 in (3.80 cm)
- Weight: 8.10 oz (228.00 g)

CONNECTION OPTIONS

- RS-232/485 DB-9 (XStream-PKG-R)
- USB (XStream-PKG-U)
- Telephone RJ-11 (XStream-PKG-T)

POWER REQUIREMENTS

XStream-PKG-R
- Power supply voltage: 7 - 18V
- Receive current:
  - 70 mA @ 900 MHz
  - 90 mA @ 2.4 GHz
- Transmit current:
  - 170 mA @ 900 MHz
  - 180 mA @ 2.4 GHz
- Power Down Current: < 1 mA

XStream-PKG-U
- Power supply voltage: 5 - 12V
- Receive current:
  - 90 mA @ 900 MHz
  - 115 mA @ 2.4 GHz
- Transmit current:
  - 185 mA @ 900 MHz
  - 200 mA @ 2.4 GHz
- Power Down Current: 50 mA

XStream-PKG-T
- Power supply voltage: 7 - 28V
- Receive current:
  - 140 mA @ 900 MHz
  - 160 mA @ 2.4 GHz
- Transmit current:
  - 220 mA @ 900 MHz
  - 230 mA @ 2.4 GHz
- Power down current: n/a

ENVIRONMENTAL

All models
- Operating temperature: 0º C to 70º C (commercial)
- Operating temperature: -40º C to 85º C (industrial)

CERTIFICATIONS

- FCC ID (U.S. Certification Part 15.247)
  - OUR9XSTREAM (900 MHz),
  - OUR-24XSTREAM (2.4 GHz)
- IC ID (Canada)
  - 4214A-9XSTREAM (900 MHz),
  - 4214A 12008 (2.4 GHz)
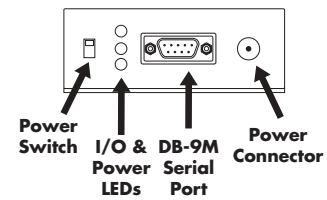- Europe
  - ETSI, CE (2.4 GHz only)

NETWORKING AND SECURITY

- Frequency: ISM 902 - 928 MHz or 2.4000 - 2.4835 GHz
- Spread Spectrum: FHSS (Frequency Hopping Spread Spectrum)
- Modulation: FSK (Frequency Shift Keying)
- Supported network topologies: Peer-to-peer (no master/slave dependencies), point-to-point, point-to-multipoint and multidrop
- Channel capacity (software selectable): 7 hopping sequences
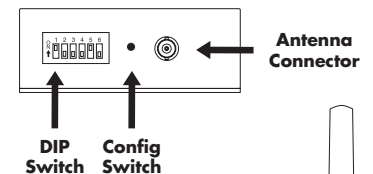- Network filtration layers: VID, Hopping Channel & Destination Address

ANTENNA

- Connector options: RPSMA (Reverse Polarity SMA)
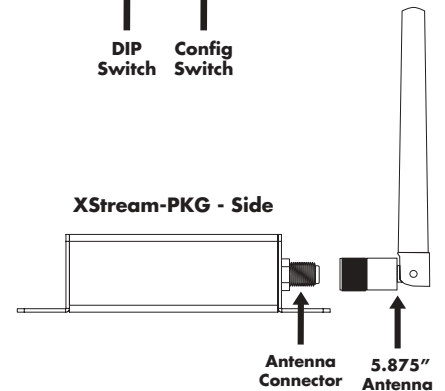- Impedance: 50 ohms unbalanced

XStream-PKG-R - Front

Power Switch | I/O & Power LEDs | DB-9M Serial Port | Power Connector

XStream-PKG-R - Back

Antenna Connector

DIP Switch | Config Switch

XStream-PKG - Side

Antenna Connector | 5.875" Antenna

For part numbers, please visit the XStream-PKG product page on the Digi website.

DIGI SERVICE AND SUPPORT - You can purchase with confidence knowing that Digi is here to support you with expert technical support and a strong five-year warranty. www.digi.com/support

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